

VOLUME CONTENTS

VOLUME 66

2002

NUMBER 1

F. L. CHERNOUS'KO: The optimum rectilinear motion of a two-mass system	1
L. D. AKULENKO and A. M. SHMATKOV: Time-optimal steering of a point mass onto the surface of a sphere at zero velocity	9
A. P. MARKEYEV: The boundedness of trajectories in the neighbourhood of the orbitally unstable periodic motion of a Hamiltonian system	23
V. N. PILIPCHUK: Some remarks on non-smooth transformations of space and time for vibrating systems with rigid barriers	31
A. A. KOROBKIN: The entry of an elliptical paraboloid into a liquid at variable velocity	39
R. R. GADYL'SHIN: The scattering of a plane wave by a trap in the critical case	49
A. M. TER-KRIKOROV: Perturbations from a source in a three-layer atmosphere	59
V. G. BAIDULOV, Yu. V. KISTOVICH* and Yu. D. CHASHECHKIN: Properties of the exact wave-type solutions in the theory of stratified flows	65
I. V. STUROVA: The action of periodic surface pressures on a floating elastic platform	71
S. P. BAUTIN and Yu. Yu. CHERNYSHOV: A flow of a heat-conducting gas analogous to a centred Riemann wave	83
S. P. BAKANOV, V. ŽDIMAL, Sh. Kh. ZARIPOV and J. SMOLIK: The motion of an aerosol drop in a thermal diffusion chamber	91
E. L. AERO: Dynamic problems for the sine-Gordon equation with variable coefficients. Exact solutions ..	99
A. G. KULIKOVSKII and A. P. CHUGAINOVA: The stability of a metastable shock wave in a viscoelastic medium under two-dimensional perturbations	107
K. S. SULTANOV: The attenuation of longitudinal waves in non-linear viscoelastic media	115
A. P. MALYSHEV: A differential model of frequency-independent energy dissipation during vibrations ..	123
D. D. IVLEV, L. A. MAKSIMOVA and R. I. NEPERSHIN: The indentation of a flat punch into an ideal rigid-plastic half-space under the action of shear contact stresses	129
R. I. NEPERSHIN: The indentation of a flat punch into a rigid-plastic half-space	135
Ye. V. GLUSHKOV, N. V. GLUSHKOVA and A. V. YEKHLAKOV: A mathematical model of the ultrasonic detection of three-dimensional cracks	141
Contents of next issue	150

VOLUME 66

2002

NUMBER 2

Sergei Aleksandrovich Ambartsumyan (80th birthday tribute)	151
L. D. AKULENKO: Higher-order averaging schemes in systems with fast and slow phases	153
A. S. SMYSHLYAYEV and F. L. CHERNOUS'KO: The equilibrium conditions of a rod on a rough plane	165
T. V. RUDENKO: The stability of the steady motion of a gyrostat with a liquid in a cavity	171
V. I. KALENOVA and V. M. MOROZOV: The stability of steady motions of non-holonomic Chaplygin systems	179
O. I. KOSTYUKOVA: A parametric convex optimal control problem for a linear system	187
G. A. KURINA: Asymptotic expansion of solutions of optimal control problems for discrete weakly controllable systems	201
V. A. VAKHRUSHEV and V. N. USHAKOV: A computer realization of control-with-guide procedures ..	215
D. A. VAGIN and N. N. PETROV: A problem of group pursuit with phase constraints	225
A. Sh. KUCHKAROV and B. B. RIKHSIYEV: The possibility of avoiding an encounter in a linear differential game of evasion	233
A. A. GURCHENKOV: The unsteady motion of a viscous fluid between rotating parallel walls	239
I. I. DEMCHIK: The modelling of cyclic filtration and variable-rate filtration	245

D. A. ONISHCHENKO: A probability analysis of the problem of the breakthrough of a coarsely cellular foam in a porous medium	251
I. V. ANDRIANOV: The specific features of the limiting transition from a discrete elastic medium to a continuous one	261
V. A. BABESHKO, T. I. BELYANKOVA and V. V. KALINCHUK: The method of fictitious absorption in problems of the theory of elasticity for an inhomogeneous half-space.....	267
V. A. BABESHKO and V. V. KALINCHUK: The method of fictitious absorption in coupled mixed problems of the theory of elasticity and mathematical physics for a multilayered inhomogeneous half-space.....	275
L. A. AGALOVYAN, R. C. GEVORKYAN and A. V. SAAKYAN: The asymptotic solution of the three-dimensional problem of the theory of elasticity for plates of incompressible materials.....	283
V. M. ALEKSANDROV: Doubly periodic contact problems for an elastic layer	297
A. V. GUBA and L. M. ZUBOV: Torsion of prismatic elastic bodies containing screw dislocations	307
G. Yu. YERMOLENKO: Quadratures of the solutions of the first and second initial-boundary-value problems of elasticity theory for an anisotropic material	317
G. A. LEONOV: Instability in the first approximation for time-dependent linearizations	323
D. R. MERKIN: The earth as a gigantic, rapidly rotating gyroscope	327
Contents of next issue	I

VOLUME 66

2002

NUMBER 3

Editorial	iii
A. S. ANDREYEV and C. RISITO: The stability of generalized steady motion	331
F. D. BAIRAMOV and M. Yu. SAFRONOV: The stability of systems with distributed parameters and lumped forces	341
V. F. ZHURAVLEV: Invariant normalization of non-autonomous Hamiltonian systems.....	347
O. V. KHOLOSTOVA: Internal resonance in an autonomous Hamiltonian system close to a system with a cyclic coordinate	357
O. N. KIRILLOV and A. P. SEYRANIAN: Metamorphoses of characteristic curves in circulatory systems..	371
G. A. LEONOV: The localization of attractors of the Liénard equation.....	387
V. N. SHASHIKHIN: Robust stabilization of linear interval systems	393
Yu. M. ZABOLOTNOV and V. V. LYUBIMOV: Non-linear resonance evolutionary effects in the motion of a rigid body about a fixed point.....	401
G. V. GORR and Ye. K. UZBEK: The integration of Poisson's equations in the case of three linear invariant relations	409
M. Z. DOSAYEV and V. A. SAMSONOV: The stability of the rotation of a heavy body with a viscous filling	419
V. S. GALKIN and V. A. ZHAROV: The transport properties of gases in Burnett's approximation	425
E. V. TEODOROVICH: An improved perturbation theory method for describing the effective permeability of a randomly heterogeneous medium	439
M. G. ZHUCHKOVA and D. P. KOUZOV: The transmission of a flexural-gravitational wave through a rigid end-stop in a floating plate	447
V. A. KUCHER and V. A. PUPYREV: Integral equations of Saint-Venant's problem and the problem of antiplane deformation.....	455
A. A. GUSENKOVA: The method of potential functions in problems of the theory of elasticity for bodies with a defect	461
Ye. V. DIDENKO and Yu. A. USTINOV: The critical modes of oscillation of a transversely inhomogeneous plate with a periodic structure	471
A. V. BELOKON', A. V. NASEDKIN and A. N. SOLOV'YEV: New schemes for the finite-element dynamic analysis of piezoelectric devices	481
I. I. ARGATOV and S. A. NAZAROV: Energy release caused by the kinking of a crack in a plane anisotropic solid	491
J. R. OCKENDON and S. D. HOWISON: Kochina and Hele-Shaw in modern mathematics, natural science and industry	505
The Fourth International Symposium on Classical and Celestial Mechanics (Velikiye Luki, 15–20 August 2001)	513
Contents of next issue	I

Announcement	517
Lev Aleksandrovich Galin (on the ninetieth anniversary of his birth)	519
V. F. ZHURAVLEV: A model of the mechanism of motion of a snake	523
O. V. KHOLOSTOVA: The periodic motions of a non-autonomous Hamiltonian system with two degrees of freedom at parametric resonance of the fundamental type	529
I. M. ARKHIPOVA: Steady motion of a rigid unbalanced rotor in non-linear elastic bearings.....	539
E. K. KOSTOUSOVA: Outer polyhedral estimates for attainability sets of systems with bilinear uncertainty..	547
S. M. ZEN' KOVSKAYA and A. L. SHLEIKEL': The effect of high-frequency vibration on the onset of Marangoni convection in a horizontal liquid layer	559
O. B. KHAIRULLINA: The initial stage of collapse of symmetric gaseous prisms	569
V. A. KOVALEV: Matching of asymptotic approximations in the problem of the scattering of acoustic waves by an elastic spherical shell.....	581
Yu. N. SANKIN and A. Ye. TRIFANOV: Axisymmetrical vibrations of shells of revolution under abrupt loading	591
G. A. KAPANADZE: A problem of the bending of a plate for a doubly-connected domain bounded by polygons	601
E. I. GRIGOLYUK and Ye. A. LOPANITSYN: The axisymmetric postbuckling behaviour of shallow spherical domes	605
V. M. ALEKSANDROV and D. A. POZHARSKII: The problem of an inclusion in a three-dimensional elastic wedge	617
V. M. ALEKSANDROV and F. V. KUDROVA: An exact solution of the periodic contact problem for an elastic layer taking wear into account	629
I. I. ARGATOV: The pressure of a punch with a rounded edge on an elastic half-space.....	637
R. D. BANTSURI and N. N. SHAVLAKADZE: The contact problem for an anisotropic wedge-shaped plate with an elastic fastening of variable stiffness	645
V. S. NIKISHIN: Axisymmetric contact problems for a two-layer elastic half-space with an annular or circular crack at the interface of the layers	651
G. Ya. POPOV: Exact solutions of some mixed problems of uncoupled thermoelasticity for a truncated hollow circular cone with a groove along the generatrix.....	661
G. Ya. POPOV: Exact solutions of some mixed problems of uncoupled thermoelasticity theory for a finite hollow circular cylinder with a groove along the generatrix	673
D. BARDZOKAS and M. I. FIL'SHTINSKII: The antiplane problem of electroelasticity for a cylinder with a tunnel crack excited by an arbitrary system of surface electrodes	683
Vladimir Nikolayevich Rubanovskii (7 February 1941–22 March 2002).....	691
Contents of next issue	II

L. D. AKULENKO, S. A. KUMAKSHEV and S. V. NESTEROV: Effective numerical–analytical solution of isoperimetric variational problems of mechanics by an accelerated convergence method.....	693
Yu. I. BERDYSHEV: A problem of the sequential approach to a group of moving points by a third-order non-linear control system.....	709
G. I. IBRAGIMOV: A problem of optimal pursuit in systems with distributed parameters.....	719
K. V. KORLYAKOV and A. G. CHENTSOV: An example of the construction of a multivalued quasi-strategy by iterative methods	725
O. R. KAYUMOV: Globally controllable systems of rigid bodies with several stable rest states	739
V. G. VIL'KE and A. V. SHATINA: Slow dissipative evolution of the motion of a viscoelastic sphere in the restricted circular three-body problem	745

A. N. KRAIKO: The formulation of problems of lubrication theory for journal bearings.....	757
V. G. ZHARINOV: Exact solutions of problems of the three-dimensional flow of ideal viscous incompressible fluids near cylindrical surfaces.....	767
V. V. ALEKSEYEV: The form of the loss of stability of a boundary layer on a flexible surface at high Reynolds numbers	775
A. V. LATYSHEV and A. A. YUSHKANOV: Smoluchowski's problem for molecular gases taking the accommodation coefficients of the translational and rotational energy of the molecules into account ..	787
A. S. MILYAYEV: The action of a concentrated force inside an elastic half-plane with a step.....	797
V. K. LASHCHENOV: The steady motion of an elastic cylinder compressed by a fixed shell.....	805
H. S. KIT, V. V. MYKHAS'SKIV and O. M. KHAI: Analysis of the steady oscillations of a plane absolutely rigid inclusion in a three-dimensional elastic body by the boundary element method.....	817
S. N. GAVRILOV and D. A. INDEITSEV: The evolution of a trapped mode of oscillations in a "string on an elastic foundation-moving inertial inclusion" system.....	825
V. M. ALEKSANDROV: A method of solving the integral equation of plane contact problems for semi-bounded bodies.....	835
V. B. ZELENTSOV: An asymptotic method of solving transient dynamic contact problems of the theory of elasticity for a strip	841
Corrigenda	857
Contents of next issue	858

VOLUME 66

2002

NUMBER 6

Nikolai Gur'yevich Chetayev (on the 100th anniversary of his birth)	859
Vladimir Nikolayevich Koshlyakov (on his 80th birthday)	867
Vladimir Mefod'yevich Matrosov (on his 70th birthday).....	869
V. V. RUMYANTSEV: Integral variational principles in Poincaré and Chetayev variables.....	873
V. F. ZHURAVLEV: The normal form of perturbations of non-linear oscillatory systems	881
A. P. MARKEYEV: An algorithm for normalizing Hamiltonian systems in the problem of the orbital stability of periodic motions	889
N. V. DENISOVA and V. V. KOZLOV: Steady motions of a continuous medium, resonances and Lagrangian turbulence	897
A. G. PETROV: A parametric method of constructing Poincaré mappings in hydrodynamic systems	905
V. S. SERGEEV: Stability in systems with aftereffect when there are singularities in the integral kernels..	923
S. Ya. STEPANOV: Symmetrization of the sign-definiteness criteria of symmetrical quadratic forms.....	933
G. CANTARELLI: The stability of the equilibrium position of scleronomous mechanical systems.....	943
A. S. SUMBATOV: A formula for the reactions of ideal constraints	957
A. V. KARAPETYAN: The steady motions of a heavy ellipsoid filled with liquid on a plane with friction..	963
Yu. D. GLUKHIKH and V. N. TKHAI: Parametric resonance in the problem of a heavy rigid body rolling along a straight line on a plane	971
N. B. GRIGOR'YEVA: The stability of Riemann ellipsoids in the Lyapunov formulation.....	985
Yu. F. GOLUBEV: Motion with a constant velocity modulus in a central gravitational field	1001
Contents of next issue	I
Volume Contents/Author Index for Volume 66	III

AUTHOR INDEX

- Andrianov, I. V. 261
Aero, E. L. 99
Agalovyan, L. A. 283
Akulenko, L. D. 9, 153, 693
Aleksandrov, V. M. 297, 617, 629, 835
Aleksyev, V. V. 775
Andreyev, A. S. 331
Argatov, I. I. 491, 637
Arkhipova, I. M. 539
- Babeshko, V. A. 267, 275
Baidulov, V. G. 65
Bairamov, F. D. 341
Bakanov, S. P. 91
Bantsuri, R. D. 645
Bardzokas, D. 683
Bautin, S. P. 83
Belokon', A. V. 481
Belyankova, T. I. 267
Berdyshev, Yu. I. 709
- Cantarelli, G. 943
Chashechkin, Yu. D. 65
Chentsov, A. G. 725
Chernous'ko, F. L. 1, 165
Chernyshov, Yu. Yu. 83
Chugainova, A. P. 107
- Demchik, I. I. 245
Denisova, N. V. 897
Didenko, Ye. V. 471
Dosayev, M. Z. 419
- Fil'shtinskii, M. I. 683
- Gadyl'shin, R. R. 49
Galkin, V. S. 425
Gavrilov, S. N. 825
Gevorkyan, R. C. 283
Glukhikh, Yu. D. 971
Glushkov, Ye. V. 141
Glushkova, N. V. 141
Golubev, Yu. F. 1001
Gorr, G. V. 409
Grigolyuk, E. I. 605
Grigor'yeva, N. B. 985
Guba, A. V. 307
Gurchenkov, A. A. 239
Gusenkova, A. A. 461
- Howison, S. D. 505
- Ibragimov, G. I. 719
Indeitsev, D. A. 825
Ivlev, D. D. 129
- Kalenova, V. I. 179
Kalinchuk, V. V. 267, 275
Kapanadze, G. A. 601
- Karapetyan, A. V. 963
Kayumov, O. R. 739
Khairullina, O. B. 569
Khaj, O. M. 817
Kholostova, O. V. 357, 529
Kirillov, O. N. 371
Kistovich, Yu. V. 65
Kit, H. S. 817
Korlyakov, K. V. 725
Korobkin, A. A. 39
Kostousova, E. K. 547
Kostyukova, O. I. 187
Kouzov, D. P. 447
Kovalev, V. A. 581
Kozlov, V. V. 897
Kraiko, A. N. 757
Kucher, V. A. 455
Kuchkarov, A. Sh. 233
Kudrova, F. V. 629
Kulikovskii, A. G. 107
Kumakshev, S. A. 693
Kurina, G. A. 201
- Lashchenov, V. K. 805
Latyshev, A. V. 787
Leonov, G. A. 323, 387
Lopanitsyn, Ye. A. 605
Lyubimov, V. V. 401
- Maksimova, L. A. 129
Malyshev, A. P. 123
Markeyev, A. P. 23, 889
Merkin, D. R. 327
Milyayev, A. S. 797
Morozov, V. M. 179
Mykhas'skiv, V. V. 817
- Nasedkin, A. V. 481
Nazarov, S. A. 491
Nepershin, R. I. 129, 135
Nesterov, S. V. 693
Nikishin, V. S. 651
- Ockendon, J. R. 505
Onishchenko, D. A. 251
- Petrov, A. G. 905
Petrov, N. N. 225
Pilipchuk, V. N. 31
Popov, G. Ya. 661, 673
Pozharskii, D. A. 617
Pupyrev, V. A. 455
- Rikhsiyev, B. B. 233
Risito, C. 331
Rudenko, T. V. 171
Rumyantsev, V. V. 873
- Saakyan, A. V. 283
Safronov, M. Yu. 341

Samsonov, V. A. 419
Sankin, Yu. N. 591
Sergeev, V. S. 923
Seyranian, A. P. 371
Shashikhin, V. N. 393
Shatina, A. V. 745
Shavlakadze, N. N. 645
Shleikel', A. L. 559
Shmatkov, A. M. 9
Smolik, J. 91
Smyshlyayev, A. S. 165
Solov'yev, A. N. 481
Stepanov, S. Ya. 933
Sturova, I. V. 71
Sultanov, K. S. 115
Sumbatov, A. S. 957

Teodorovich, E. V. 439
Ter-Krikorov, A. M. 59
Tkhai, V. N. 971
Trifanov, A. Ye. 591

Ushakov, V. N. 215
Ustinov, Yu. A. 471
Uzbek, Ye. K. 409

Vagin, D. A. 225
Vakhrushev, V. A. 215
Vil'ke, V. G. 745

Yekhlakov, A. V. 141
Yermolenko, G. Yu. 317
Yushkanov, A. A. 787

Zabolotnov, Yu. M. 401
Zaripov, Sh. Kh. 91
Ždimal, V. 91
Zelentsov, V. B. 841
Zen'kovskaya, S. M. 559
Zharinov, V. G. 767
Zharov, V. A. 425
Zhuchkova, M. G. 447
Zhuravlev, V. F. 347, 523, 881